

## Claims

1. An animal collar comprising:

a length of flexible tubing having a fastener adapted to be secured around the neck of an animal, at least a portion of the tubing being clear;

an electrical ribbon cable extended within the tubing having therein at least two electrical conductors, the cable further having thereon, at spaced intervals, a plurality of light-emitting diodes electrically connected to the conductors, the cable and diodes being hermetically sealed inside the tubing and the light-emitting diodes being visible through the clear portion of the tubing;

a battery attached to the tubing and electrically connected to conductors in the ribbon cable for powering the light-emitting diodes; and

a switch attached to the tubing for electrically connecting and disconnecting the battery from the light-emitting diodes.

2. The animal collar of claim 1 wherein the light-emitting diodes are connected directly to the conductors in the ribbon cable.

3. The animal collar of claim 1 wherein the light-emitting diodes each have a field of view of less than about 60°, and wherein a sufficient number of diodes are positioned on the cable so that at least two diodes are visible to an observer.

4. The animal collar of claim 1 wherein the cable is secured within the flexible tubing such that strain along the length of the tubing is not transmitted to the cable therein.

5. The animal collar of claim 1 further including a battery compartment for holding the battery, the battery compartment having sufficient clearance between the battery and walls of the battery compartment to shed water after the collar is wetted.

6. The animal collar of claim 1 further including an antenna and a radio transmitter secured to the band adapted to transmit a radio frequency signal through the antenna.

7. The animal collar of claim 6 wherein the transmitter is disposed in the tubing and the antenna is printed on the ribbon cable.

8. The animal collar of claim 6 further including a radio frequency signal receiver adapted to determine direction or distance of the collar with respect to the receiver.

9. A tracking collar comprising:

a band having a fastener adapted to fasten to a movable object;

an electrical ribbon cable extending along the band;

an antenna within the electrical ribbon cable;

a radio transmitter secured to the band adapted to transmit a radio frequency signal through the antenna; and

a battery attached to the collar and powering the radio transmitter.

10. The tracking collar of claim 9 further including a plurality of light-emitting diodes connected directly to conductors in the ribbon cable, the light-emitting diodes each having a field of view of less than about 60°, and wherein a sufficient number of diodes are positioned on the cable so that at least two diodes are visible to an observer.

11. The tracking collar of claim 9 wherein the collar is a pet collar and the band is a length of tubing having a fastener adapted to be secured around the neck of a pet, at least a portion of the tubing being clear, the electrical ribbon cable extending through a length of the tubing.

12. The tracking collar of claim 11 wherein the cable and diodes are hermetically sealed inside the tubing and the light-emitting diodes being visible through the clear portion of the tubing and wherein the cable is secured within the flexible tubing such that strain along the length of the tubing is not transmitted to the cable therein.

13. The tracking collar of claim 11 wherein the transmitter is disposed in the tubing and the antenna is printed on the ribbon cable.

14. The tracking collar of claim 9 wherein the collar further includes a battery compartment for holding a battery for powering the transmitter, the battery compartment having sufficient clearance between the battery and walls of the battery compartment to shed water after the collar is wetted.

15. A tracking system comprising:

a collar having a band with a fastener adapted to fasten to a movable object, an electrical ribbon cable extending along the band, an antenna within the electrical ribbon cable, a radio transmitter secured to the cable adapted to transmit a radio

frequency signal through the antenna, and a battery attached to the collar and powering the radio transmitter; and

a radio frequency signal receiver adapted to determine direction or distance of the collar with respect to the receiver.

16. The tracking system of claim 15 wherein the radio frequency signal receiver includes at least one directional antenna to determine the relative direction of the radio frequency signal from the transmitter.

17. The tracking system of claim 15 wherein the radio frequency signal receiver includes an alarm to signal when a radio frequency signal from the transmitter decreases below a predetermined strength.

18. The tracking system of claim 15 wherein the radio frequency signal receiver includes a signal attenuator adapted to automatically adjust gain as the transmitter approaches the receiver to prevent overloading of the receiver.

19. A tracking collar comprising:

a band having a fastener adapted to fasten to a movable object;

an electrical ribbon cable extending along the band and having therein a plurality of electrical conductors extending substantially the entire distance of the cable;

a plurality of light-emitting diodes connected at spaced intervals to the electrical ribbon cable and receiving electrical power from at least two electrical conductors therein;

an antenna within the electrical ribbon cable;

a radio transmitter secured to the band adapted to transmit a radio frequency signal through the antenna; and

a battery attached to the band and powering the light-emitting diodes and radio transmitter.

20. The tracking collar of claim 19 wherein the antenna and electrical conductors providing power to the light-emitting diodes are printed on the ribbon cable.

21. The tracking collar of claim 19 wherein the collar is a pet collar and the band is a length of clear flexible tubing having a fastener adapted to be secured around the neck of a pet, the electrical ribbon cable extending through a length of the tubing.

22. The tracking collar of claim 21 wherein the cable and diodes are hermetically sealed inside the tubing and the light-emitting diodes being visible through the clear portion of the tubing and wherein the cable is secured within the flexible tubing such that strain along the length of the tubing is not transmitted to the cable therein.

23. The tracking collar of claim 21 further including a battery compartment for holding the battery, the battery compartment having sufficient clearance between the battery and walls of the battery compartment to shed water after the collar is wetted.

24. The tracking collar of claim 19 further including a radio frequency signal receiver adapted to determine direction or distance of the collar with respect to the receiver.